EFAO 2021: Research Protocol

Organic field corn screening trial

Farmer-researcher(s): Michael Oeggerli, Heidi Farms Inc. - East

Project type: Screening trial

Research priorities: Seed selection, production and breeding

EFAO Contact: Sarah Hargreaves, sarah@efao.ca

Objective

To narrow down varieties of organic field corn that are best suited for production on Michael's farm.

Background

This is Michael's first year growing corn organically. When he talked to other organic farmers about variety selection, he found that not a lot was known about the best varieties for his region.

This trial is set-up as a screening trial with no replicate plots of each variety. As such, we will not know if any differences Michael observes among varieties can be reproduced variably.

Rather, Michael hopes to identify any large differences among varieties, to narrow down varieties for a potential replicated variety trial in the future. He also wants to use the screening trial to see how much work it will be to adjust the inter-row cultivator for the different varieties before committing to a replicated trial.

Experimental Design

Varieties & Field layout

Each variety will be planted with a 12 row corn planter and a 12 row cultivator. Each row is ~ ~ 1200'.

Note that the randomization below can be used for field layout or just as an example. The important part is that you randomize the order in some way (draw from a hat or randomly pick a bag) and that you record the order when you plant.

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Randomized order of varieties
Pioneer 9608
Saatbau Leonido - organic seed
Pride Seeds A6015
Pride Seeds A5925
Dedell 3808 - organic seed
Saatbau Danubio - organic seed
Dedell 3146
Pioneer 9998
Pioneer 0157
Pioneer 9608

Statistical model

None, since this is a screening trial with no replicates.

Measurements for each variety

Early season vigour

Michael will scout each variety ~ at least once a week (more in the early season) and record the average growth stage of each variety (eg. v1, v2 ...). See data collection sheet.

Inter-row cultivator passes

Michael will use his standard field records to record the number of inter-row cultivator passes for each variety.

Yield, Harvest Moisture and Test Weight

Michael will use his weigh wagon to measure harvest and weight from each pass of each variety. He will then use the moisture and area harvested to determine the “dry” (15.5%) yield per acre for each variety, and record bushel weight.

Profitability

- Seed price - varies by variety
- Cultivator passes - might vary by variety
- Inputs - standard

- Planting - standard
- Price for drying based on harvest moisture - varies by variety
- Sale price - any variety not making grade 2 will be docked price accordingly

Photos

Michael will take photos of each variety throughout the season.

Research Plan

Time	Task	Methods & Measurements or Action Item
May 7 May 8 May 15	Apply manure Cultivate Cultivate 2nd pass	
May 15	Field layout	Randomized order for test plot
May 15	Planting	All on the same day
May 20-May 30 June 5 June 10 June 17 June 24 July 1	Check every day during emergence; Weekly scouting	Record emergence and scout data
June 1 - July 31	Crop management	Recording
October 25- November 10	Harvest	Each variety separately harvested, weighed and measured (moisture and bushel weight)
October 25- November 10	Drying	
November 22	Submit data and photos	Submit data and photos to Sarah
December 31	Invoice	Send Sarah invoice for farmer-fee

*Please note that if data is submitted after the submission deadline, EFAO staff cannot guarantee that your data will be analyzed and written up before the Research Symposium and/or the next growing season.

Staff check-ins

End of May
End of June
October/November

Materials

Please list all materials, supplies and equipment that will be reimbursed for this project. If possible, please also indicate a short-list of any in-kind materials, supplies and equipment that you will use.

Material	Unit	Quantity Required	Total Cost*	Note
Corn seed			~ $1,200	For 8 varieties - the 2 organic varieties were donated by Sure Source Agronomy
All planting and harvesting equipment	Dragline manure applicator Field cultivator Tine weeder Interrow cultivator Combine Wagon Dryer Storage bin		In-kind	
Total			~0	

Acknowledgements

Sure Source Agronomy for organic varieties.

Farmer-fee

$500 in 2021, invoiced to EFAO after farmer-researcher submits data.

Invoices for Farmer-Fees & Reimbursements

Research expenses

- Email an invoice along with copies of receipts for all qualified expenses to **research@efao.ca**.
- Expenses can be claimed anytime throughout the year.
- Deadline: December 31, 2021

Farmer-fee

- Email *an invoice for your farmer-fee* to **research@efao.ca**.
- Farmer-fees can be claimed after your data is submitted
- Deadline: December 31, 2021
- If you collect HST for your farm business, you can choose to add HST to your fee.

Memorandum of Understanding

You agree to keep an active membership with EFAO throughout the duration of your trial.

To check the status of your membership, log in here: https://efao.z2systems.com/np/clients/efao/login.jsp or contact Martina, martina@efao.ca.